

ON
INVERSION OF THE UTERUS

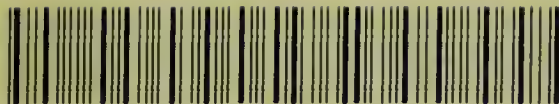
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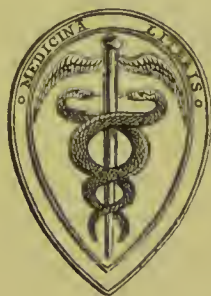
*WITH ELEVEN CASES
SUCCESSFULLY TREATED BY THE SIGMOID
REPOSITOR*

A POSTGRADUATE LECTURE DELIVERED AT THE
CHELSEA HOSPITAL FOR WOMEN

BY

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PREFACE.



THE number of communications I have received from medical men at home and abroad since the publication, in the *British Medical Journal*, of this lecture, has led me to believe that its reproduction in a separate form might be acceptable to the profession.

I am also glad to have the opportunity of correcting some errors and making several important textual and illustrative additions which, it is to be hoped, may render my method of reposition more intelligible and practicable.

UPPER WIMPOLE STREET,
LONDON, W.

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ON
INVERSION OF THE UTERUS.

GENTLEMEN,—In the names of my colleagues and self, I have much pleasure in welcoming you once more within these walls. The course of lectures to be delivered this year embraces subjects of the greatest practical interest. Those selected by my colleagues are most important, for they relate to the diagnosis and treatment of diseases which are met with every day. I feel some apology is due to you for choosing as my subject a displacement of the uterus which is so seldom met with, that many medical men, in the whole course of their practice, never see a single case. As I stated, however, last session, that our object in delivering these lectures was to give others the advantage of the experience gained at this hospital; and as it has fallen to my lot to have exceptional opportunities of treating this rare condition of the uterus, I have ventured to occupy your time with some remarks, which must necessarily be synoptical, on inversion of the uterus.

History of Inversion.—I shall not detain you with the history of this interesting subject, for to give even a brief sketch of it would require more time than we have now at our disposal. Those who may wish for full historical details will find them in that most admirable “Essay, Literary and Practical, on Inversion of the Uteri,” by our learned countryman, Dr. Crosse.

Varieties of Inversion.—Inversion of the uterus may be puerperal or non-puerperal, recent or chronic.

Puerperal inversion is when the displacement is found in connection with abortion or parturition.

Non-puerperal inversion is when the displacement occurs in an unimpregnated uterus.

Recent inversion includes the period between the occurrence of the displacement and involution of the uterus.

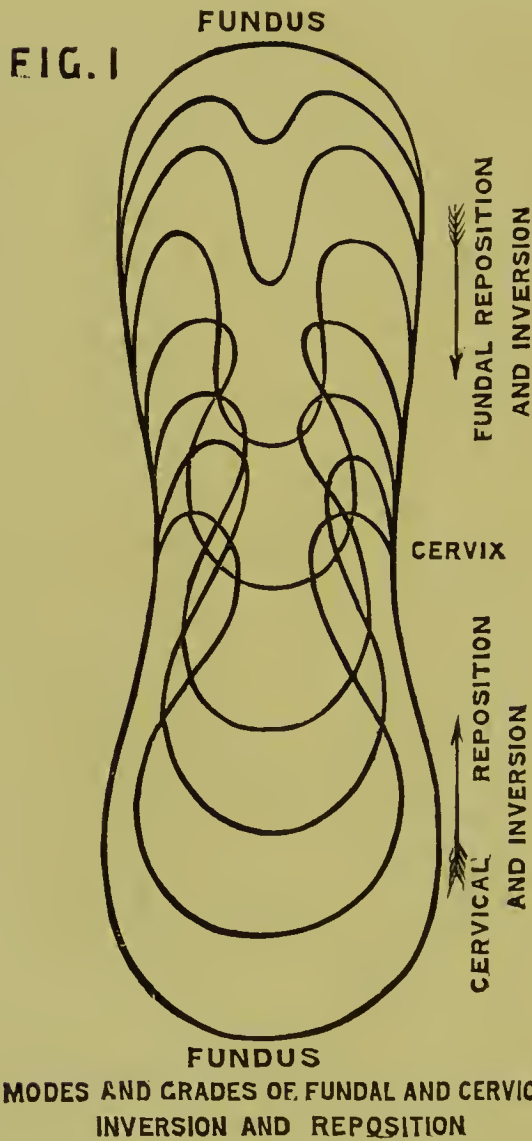
Chronic inversion is so called during the existence of the displacement after involution has been completed.

Frequency of Inversion.—Puerperal inversion is far more common than non-puerperal. Of 400 cases noted by Crosse, he found that in 350 it occurred as a sequel to parturition, in 40 from polypus, and in 10 from other causes. Dr. Atthill doubts the correctness of the view commonly held, that inversion occurs in the very large majority of cases immediately after

delivery. He was led to adopt this view in consequence of the fact that, of the five cases he had seen, two were puerperal, and three non-puerperal. This exceptional experience must, I think, be due to the superior obstetric skill of the Irish practitioners and midwives. Dr. M'Clintock does not, however, endorse Dr. Atthill's opinion. He says that, out of twenty-one cases occurring in the practice of obstetricians in Dublin, there were only four in which the inversion was the result of a tumour. In confirmation of the view held by Crosse, M'Clintock, and every other writer on the subject, as far as my reading goes, it will be noticed that, of the twelve cases related further on, only one was non-puerperal. It may be concluded, therefore, for every non-puerperal case, seven of puerperal origin will be noted. The frequency with which inversion occurs in connection with labour has been variously estimated. If we deduct those cases which escape observation, and those which are purposely withheld from publication, it would not probably be far from the truth if the proportion were taken as 1 in 100,000 labours.

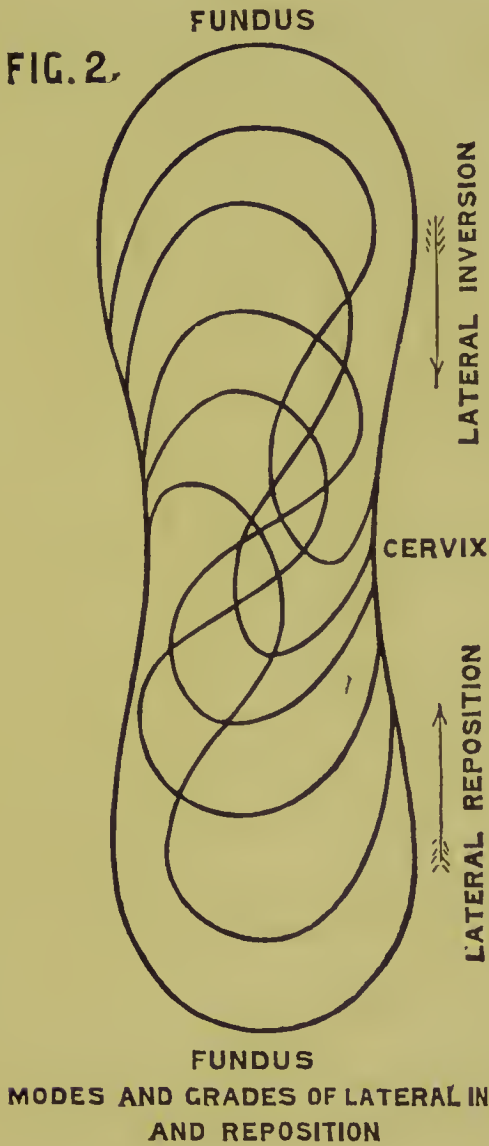
Grades of Inversion.—Inversion of the uterus has been divided into incomplete and complete. Incomplete inversion has many grades; from the first, which is represented by a mere indentation of the fundus or cervix, to the last act of introcession which

ends in complete inversion. When the vagina also becomes inverted, the displaced uterus descends, and



protrudes beyond the vulva, forming what has been

called prolapsed inverted uterus, or utero-vaginal inversion. Some authors describe inversion as



complete only when the uterus has escaped from the

vulva, but the situation of the inverted uterus has nothing to do with the condition of inversion.

Modes of Inversion.—There are three ways in which the walls of the uterus may pass down through its os during the process of inversion—fundal, lateral, and cervical.

Fundal inversion is when the top of the uterus is carried down, and passes through the os.

Lateral inversion is when the side of the uterus slides down, and first passes through the os.

Cervical inversion is when the lower part of the uterus is primarily extruded (Figs. 1 and 2).

Causes of Inversion.—The causes of inversion are predisposing and determining.

The predisposing causes are very various; they may be enumerated as follows: distension or relaxation of the parturient canal, a large pelvis, the erect posture during labour, a short cord, first pregnancy, depression of the fundus, laceration of the os, and, more potent than all, the attachment of the placenta or of a tumour to the fundus.

The determining causes may be divided into automatic, systemic, and mechanical.

It must always be borne in mind that a number of predisposing, and one or more determining, causes, may be in operation at the same time; and that every case

of inversion is probably due to the combined action of many conditions which favour the occurrence of the displacement.

Automatic inversion of the uterus is caused by its own muscular contractions. It is always of the fundal variety, and is determined by an indentation of the top of the uterus, or by some body attached inside to the fundus. In puerperal inversion, the placenta originates this action; in the non-puerperal, a tumour produces the same result. It is only necessary that the uterus should be able to grasp a portion of its fundus, or some body attached to it, to enable the contractions to continue the process of introcession until the organ is turned completely inside out.

Systemic inversion of the uterus is caused by muscular contractions outside the uterus. If certain predisposing conditions exist, such as inertia of the body of the uterus and relaxation or laceration of its os, inversion may be produced by the action of the abdominal muscles, or of the abdominal and respiratory muscles combined. The mode of inversion caused in this way is usually the cervical, the displacement commencing at the cervix, and the fundus reaching the vagina last. The fundal and lateral modes, however, cannot be looked upon as impossible.

Mechanical inversion of the uterus may be either propulsive or extractive, or both.

The propulsive causes are blows on the abdomen,

manual compression, such as is used in expelling the placenta; the weight of the abdominal viscera when the patient is sitting or erect; and distension of the abdomen by fluid or gas. Inversion has been caused *post mortem* by the accumulation of gas in the intestines. The mode of displacement from mechanical causes is doubtless usually cervical; but it is possible to imagine the force to be directed against the side of the uterus in such a manner as to determine lateral inversion.

The extractive causes may be manual or gravitatory. Traction on the cord during the third stage of labour has, more than any other, been considered as the most common cause of inversion. It may undoubtedly be thus produced, but it is not nearly of such frequent occurrence as many writers imagine. When the uterus is in a state of extreme inertia, traction on the placenta attached to the side of the uterus may produce lateral inversion, for in this mode of displacement comparatively slight force is required; one side of the uterus gliding over the other down through the os, and meeting with little resistance. Traction may be effected by pulling the cord or seizing the placenta itself. Inversion may also be caused by traction on a tumour situated at the fundus, during an operation performed for its removal. If the cord be short, it is also possible the expulsion of the child may cause such traction on the placenta as to determine inversion;

and this displacement has been attributed to traction on the cord produced by the sudden descent of the child, when born during the erect position of its mother.

Diagnosis of Inversion.—The detection of inversion of the uterus is by no means so easy as might be imagined. The occurrence of the displacement is so rare, and the conditions with which it may be compared, and for which it may be mistaken, are so numerous, that the practitioner is very apt to see only what experience has taught him to look for.

The earliest grades of incomplete inversion must be difficult to diagnose. It is, however, stated that a slight depression of the fundus may be felt through the abdominal walls; and this may be possible, if they be thin and yielding. The more certain way of detecting incomplete inversion is by passing the finger in chronic; or the hand in recent, cases into the uterus, and feeling the indented fundus from within. If there be any doubt still left as to the character of the fundal protrusion, a bimanual examination will clear up the doubt.

During recent puerperal inversion, the usual mistakes made are: taking the protruding fundus for the head or breech of the child, a mole, a clot, a polypus, or a placenta. The symptoms are so urgent, and the condition of the patient so critical, that errors

are often committed in consequence of the practitioner not giving himself time to determine the exact nature of the presenting body. Hence arise those most distressing cases, in which the inverted uterus is torn away in mistake for something else, and by the act the patient's life and the medical man's reputation are simultaneously destroyed. In recent puerperal cases, the symptoms assist materially in diagnosis. The nervous condition is very marked; shock, pelvic discomfort, and faintness, are observed. Manual examination discovers a large rounded mass in the vagina, which can be pushed up, replaced, and does not fall again, as would be the case with all the other presenting bodies for which it might be mistaken. The fingers passed through the os are also arrested, and no uterine cavity is to be found. The sensibility of the inverted uterus is another valuable diagnostic symptom. In recent cases, the inverted uterus, with a placenta attached (as is usually the case), or a tumour growing from the fundus, has been mistaken for uncomplicated inversion; and I have known a case of inversion, with placenta attached, erroneously pronounced to be a polypus.

The diagnosis of chronic inversion, whether puerperal or non-puerperal, is the same. Involution being complete, a hard, rounded, and smooth body is discovered hanging from the os uteri, which can be traced all round its attachment as a distinct rim. All these

characteristics may be found so exactly simulated by a polypus, that the mistake of diagnosing an inverted uterus for a polypoid growth is the one most frequently made. Numerous cases are recorded in which the uterus has been removed in error for a polypus; and a still greater number are related in which the operation has been abandoned in consequence of the pain and shock immediately produced, and which have shown in time the true character of the body about to be removed. In ordinary cases, there is no difficulty in diagnosing between chronic inversion and polypus. The uterine sound can be passed between the polypus and os, until it reaches the fundus, when the organ is found of normal length. A finger passed into the rectum discovers the absence of the uterus from its natural site, and a sound passed into the bladder can be made to touch the finger, positively proving that the uterus is not in its normal position. This is looked upon as conclusive evidence of inversion; but it is not so, for the uterus may be retroflexed with polypus, and the retroflexion felt by the finger in the rectum may be mistaken for the polypus. Another difficulty is met with when the polypus is attached to, or grows from, nearly the whole circumference of the os uteri. I know a case of this sort which was treated by my sigmoid repositior, I need hardly add without success. Physically, the diagnosis was difficult; for the tumour was continuous with the os, and only a small opening

existed in front of the tumour, through which a sound could be passed into the uterine cavity. The tumour was, however, softer and larger than an inverted uterus, and the history of the case pointed distinctly to the conclusion that it was not inversion. The patient was ultimately sent up to London for me to try my repositior. I removed the tumour, and sent it to the distinguished practitioner who, with two others, had made a wrong diagnosis.

A great difficulty in diagnosis arises when an inverted uterus has a growth in its fundus, and it is difficult to find a line of demarcation between the two. In these cases, the uterus is not of the usual form found when inverted, and the tumour may be so large as to lead the practitioner to believe the whole mass to be new growth, and endeavour to remove it.

One other error is sometimes made. When inversion of the vagina has allowed an inverted uterus to protrude from the vulva, the displacement has been mistaken for prolapsus uteri. The wrong diagnosis is all the more easily committed when the os uteri has become closed, a condition not rare in old women. The forms of an inverted and of a prolapsed uterus are very different. In the former, the greatest diameter is to be found at its distal extremity; in the latter, at its proximal end. The passage of a sound into the bladder will clear up all doubt. In inversion, the instrument will pass up in the normal direction;

in prolapsus, it can be made to penetrate the bladder, and to pass out of the vulva beside the prolapsed uterus. Even if the inverted uterus be extruded beyond the vulva, it will be found impossible to pass the catheter down to the distal extremity of the prolapsed mass.

Treatment of Inversion.—In considering the treatment of inversion of the uterus, I shall not take into consideration the palliative and mutilative measures which some authors advise, for I believe every case of inversion can be cured by reposition, and of this mode of treatment I shall therefore only treat. Supporting the inverted uterus by a pessary, and removing the organ by operation, are, it is to be hoped, proceedings of a time for ever passed away. I am aware that inverted uteri can be attacked by disease, and in such cases reposition might be impossible.

Modes of Reposition.—As the uterus can be inverted in three different ways, so can it be re-inverted.

Fundal reposition may be attempted by pressing upon the fundus, with the object of driving it through the cervix. It is the most unscientific method of replacing an inverted uterus, as it demands unnecessary dilatation of its neck.

Lateral reposition is a very effective plan of reducing recent inversion. The manœuvre consists of sliding

one-half of the uterus over the other and through the os.

Cervical reposition is the best mode of reducing chronic inversion. Re-inversion begins at the os, and extends upwards until it reaches the fundus (see Figs. 1 and 2).

Recent puerperal inversion of the uterus can be successfully treated by taxis, the patient having been previously anæsthetised. The ease with which reposition can be effected depends on the promptness with which the displacement is discovered, and the grade at which it has arrived. In all these cases, the re-inversion should be done by the lateral method—that is to say, pressure should be exerted on the side of the fundus, so as to make one side of the uterus slide over the other and through the cervix, until the whole organ is reduced. The very worst plan is that of endeavouring to indent the fundus and press it down into the uterus, with the hope of causing it to dilate the parts before it, as it descends. In all cases, the placenta should be removed before attempting re-inversion; for, if left attached, the placenta adds materially to the bulk which has to pass through the cervix. It may also be here stated that, in cases of chronic non-puerperal inversion caused automatically by fundal tumours, these should be removed before any attempt at reduction is made. In reducing recent, as in chronic, inversion, the axes of the pelvic cavity

must be remembered, and taxis made in a line with the axis of the brim of the pelvis. This point will be referred to again. In applying force for the treatment of inversion it should never be forgotten that, although Nature is a willing servant, she must have time to do her work. Steady sustained pressure, with short intervals of rest, is by far the best way of employing taxis. Sudden and violent efforts at reposition only end in causing laceration and disappointment. I succeeded in re-inverting a uterus which had been ten days displaced, by the lateral method of taxis. The operation did not last more than two or three minutes. I was requested to see this patient with the object of removing a polypus, for which the inverted uterus had been mistaken.

Chronic inversion of the uterus, whether puerperal or non-puerperal in its origin, has been treated in a great number of ways; and it is most distressing to think what unnecessary torture poor women have suffered, while the measures adopted were so insufficient and unscientific. The time has, however, at length arrived when the treatment of uterine inversion can no longer be looked upon as an opprobrium to gynæcology.

Let us glance briefly at the various procedures which have been proposed and adopted in treating chronic inversion. They may be divided into aids to reposition, and repositors.

Aids to Reposition have been used in great numbers. Posture, hot and cold water syringing, belladonna, galvanism, and anæsthesia have all been recommended ; but, with the exception of the last, they are all useless. Many operative measures have also been adopted as aids to reposition. Compression of the uterus by hand, forceps, or bandage has been used, with the idea of expelling the blood from the uterus, and relaxing its walls. The plan is not free from danger, as in some cases it has caused extensive sloughing.

Dilatation of the cervix has been the most popular and widely used of all aids to reposition. Attempts have been made to do this by thrusting the fingers into the depression on the abdominal surface of the inverted uterus ; and this depression has been reached through the walls of the abdomen, either mediately through their thickness, or immediately by incision. The cervical ring has also been reached through the rectum and the bladder. Dilatation has also been attempted by introducing the hand into the vagina, and endeavouring to dilate the cervix by spreading out the fingers. Dilatation has been effected by opening the abdomen, and passing dilating instruments into the cervical ring, after which attempts at reposition have been made by pushing or drawing up the fundus. It has also been employed by opening the fundus uteri, and dilating from within.

Incisions have also been popular, and have been employed by many. They are made on the vaginal surface of the inverted uterus; but it has been proposed to pass a small knife through the fundus, and make them from within. The cervix thus divided certainly loses a large amount of its resisting power; but the proceeding is not safe, for laceration by extension of the incisions takes place. Sutures have been advised for the purpose of maintaining the fundus, when partly re-inverted within the cervix.

It is satisfactory to be able to say that all these operative aids to reposition concern us only as of historical interest, and can never more require to be practised.

Repositors.—Various repositors have been used from time to time for the purpose of replacing inverted uteri. The most important of these are the hand, elastic bags, and rods, either straight or curved, with ends round or cupped.

The Hand has been used in various ways. The oldest plan was the endeavour to cause reposition by the fundal method, when an attempt was made to indent the fundus by persistent pressure. This, of course, only ended, as taxis usually does, in lacerating the vagina, and not reducing the displacement. The hand is a valuable instrument in recent inversion, but

useless in all the chronic forms. It could, indeed, effect re-inversion perfectly safely if less time were required, but no hand can maintain the fatigue of taxis for a sufficiently long time. It is most unscientific to demand suddenly from the uterus that which it will willingly grant if reasonable time be afforded. Whether we look upon the uterus as a plastic organ to be moulded, or a muscle to be tired out, it must be equally wrong to endeavour to force it to change its form rapidly. The hand should therefore be discarded as a repositor in chronic inversion, for the plans of making counter-pressure and slight dilatation of the cervical ring by fingers acting through the abdomen, rectum, or bladder, do not make taxis commendable.

Elastic Bags.—It is to the use of elastic bags we owe the knowledge that sustained pressure will cure an inverted uterus. To our countryman, Dr. Tyler Smith, we are indebted for the first great step towards the scientific and successful treatment of this perilous displacement. He made his plan known in 1858, and, since that year, his mode of treatment, modified in many ways, has been the means of curing a number of very difficult cases. The elastic bag has, however, many faults. It compresses parts which need no pressure; it slips out of the vagina; it obstructs the action of the bladder and rectum, and lacks precision

in exerting its power upon the point requiring pressure, and ceases to act effectively when the fundus has been re-inverted to the level of the os. The elastic bag has done good service in curing cases, and teaching us the proper principles of successful practice, but its day has passed. It has been used filled with air or water. The former is, of course, the more effective.

Rods with Rounded Ends.—To a Frenchman, Viardel, must be attributed the credit of having proposed a rod with a rounded end for repositing an inverted uterus. He published his description of the instrument in 1674. Chailly Honoré bent the rod so as to conform with the pelvic curve. His instrument had also a round head, and was used like Viardel's, to reduce the uterus by the fundal method.

Rods with Cupped Ends.—The first cupped repositor is that referred to by Madame Boivin, who makes the following suggestion concerning re-inversion. "Might not pressure from below upwards be also made available? A pessary like that of a cup and ball might for this purpose be introduced into the vagina." This eminent medical lady little thought what an important suggestion she was then making. The change from convex to concave ends of repositors was, however, a great advance, and, in fact, became

inevitable as soon as operators abandoned the fundal and adopted the cervical method of reposition.

The Straight Cupped Repositor just escapes being a perfect instrument. It must always act to a certain extent indirectly, causing the cup to slip back past the fundus, or to urging it against the posterior wall of the vagina in a line diverging 25° (Fig. 3) from the axis of the pelvic inlet.

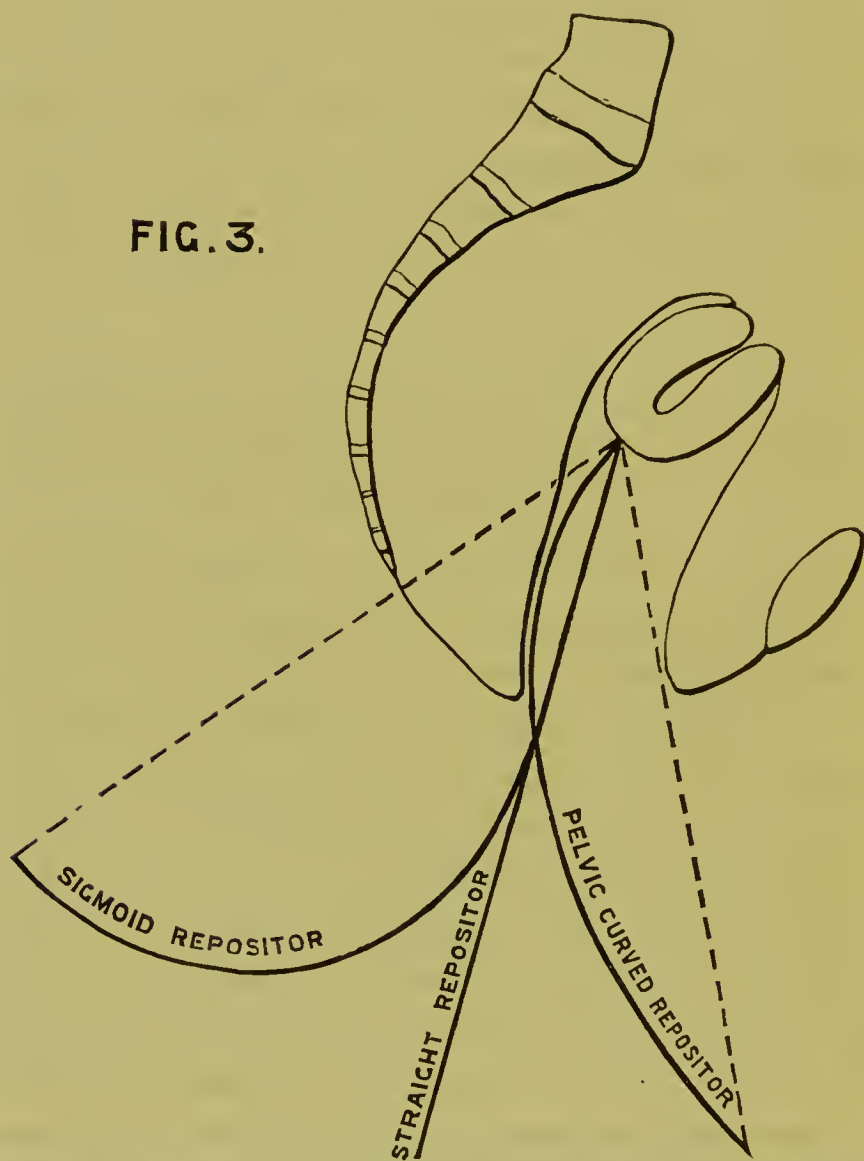
Pelvic Curved Cupped Repositors have also been used, but they are less perfect instruments than the straight ones last described. They are, however, much in favour with some gynæcologists who have not taken the trouble to master the mechanism of operative re-inversion. With these repositors, the direction of pressure against the fundus is in a line diverging as much as 45° from the axis of the pelvic inlet (Fig. 3). The only way in which they can be made to re-invert a uterus is by using their stems as levers, the perineum being the fulcrum; but this is a clumsy, indirect, and unscientific proceeding. Our countrymen early recognised the necessity of making pressure in the most advantageous direction when re-inverting a uterus. Burns, in 1728, said reposition "may be facilitated by pressing up the fundus in the direction of the axis of the uterus;" and Aitkin, in 1784, remarked that reposition of an inverted uterus might be best "effected

by pressure in a just direction." But Gooch, in 1831, gave the most explicit directions on this subject. He wrote, "You are to press the uterus against the os tinæ, not upwards and backwards, but in the direction of the upper axis of the pelvis, upwards and forwards towards the præcordia." Nothing more of a practical nature relating to the line in which force should be used can be added to these words, and their importance cannot be overrated.

The Sigmoid Cupped Repositor.—It was a case of obstinate chronic inversion, to be related more fully presently, which induced me to invent the sigmoid repositor. This case came under my care in 1878. I had, in 1868, invented sigmoid axis-traction forceps, ten years before those of Tarnier, which have the same form, and, remembering that the sigmoid shape of this forceps gave traction in the axis of the pelvic inlet, I came to the conclusion that axis-pushing in the same line might be effected by a repositor having the sigmoid form. With an instrument thus constructed, I felt I should be able to carry out Gooch's instructions, and press the uterus "in the direction of the upper axis of the pelvis," thereby rendering the reduction of an inverted uterus more easy and certain. (Fig. 3.) My anticipations have been fulfilled in a most satisfactory and gratifying manner, for I now have the pleasure of relating eleven cases of chronic inversion,

which have been treated and cured by my sigmoid repositor; and I am sure I may boldly challenge

FIG. 3.



LINES OF PRESSURE EXERTED BY STRAIGHT, CURVED AND SIGMOID REPOSITORS

any operator by any other method to show equal success, either as to ease of performance, painlessness, safety, rapidity, or unfailing action. Of course, I am referring to cases treated by sustained elastic pressure, and I exclude from these those of White, whose plan is a combination of taxis and violent pressure, by means of a ten-pound spring against the chest. It is due to Dr. R. Barnes to state that he was the first to apply elastic pressure by india-rubber bands to the stem of a repositor.

CASES OF INVERSION SUCCESSFULLY TREATED BY THE SIGMOID REPOSITOR.

CASE I.—Mrs. W. came under my care, suffering from chronic inversion of the uterus. She had been treated by several eminent gynæcologists with a variety of repositors, and by taxis, and had been sent to Sir Spencer Wells to have the uterus removed. The patient, however, thought she would have one more attempt at being cured without mutilation, and fell into my hands. It was for this case my repositor was made, and it was applied, without causing much pain, on May 7th, 1878, at 3 P.M. The cup was fitted to the fundus; and, by means of four elastic rings, two in front, and two behind, all being fastened to a belt kept up by braces, pressure was exerted in a line with the axis of the pelvic inlet to an extent never ex-

ceeding two and a half pounds. On May 8th, at 10 A.M., the uterus was found re-inverted as far as the internal os. At 9.30 P.M., in consequence of pain, all pressure was removed for thirteen hours. On May 9th, at 10.30 A.M., the repositor was again made active. On May 10th, at 10.35 A.M., the uterus was found completely re-inverted. This most obstinate case, therefore, was cured in sixty-seven hours and a half, or in fifty-four hours and a half of active treatment. The patient had no constitutional disturbance, and spent the day after in writing and knitting.

CASE II.—Mrs. H., aged 26, was admitted into University College Hospital on August 30th, 1878, with chronic inversion of the uterus, under the care of Dr. John Williams. September 3rd, the sigmoid repositor was applied. September 4th, at 10 A.M., the uterus was found partly re-inverted. At 11 P.M., the uterus was found completely re-inverted. An offensive discharge continued for some days; but the patient was soon discharged cured. Reposition in this case was effected in thirty-three hours.

CASE III.—Mrs. L., aged 26, was admitted into the Chelsea Hospital for Women, under the care of Dr. Aveling, on June 4th, 1879. She had chronic complete inversion of the uterus. Previously to her admission, attempts at reduction by taxis had been

made. June 5th, at 4.30 P.M., Dr. Aveling applied his repositor. June 6th, at 3.15 P.M., the uterus was found partly re-inverted. June 7th, at 1 A.M., the patient felt the elastic rings "suddenly go loose," and all pains ceased. At 1 P.M., the cup was tilted and easily removed. The finger passed into the uterus to the fundus, and the cavity measured $3\frac{3}{4}$ inches. An offensive discharge continued for some days; but the patient left the hospital for the seaside on June 25th, three weeks from the date of her admission.

CASE IV.—S. A. P., aged 22, married, was admitted into the Adelaide Ward of St. Thomas's Hospital, October 30th, 1878, under the care of Dr. Gervis. She had had one child fourteen months previously. Nine hours after her confinement she had a sudden gush of blood from the vagina, and hæmorrhage had continued with slight intermission ever since. She had been treated for menorrhagia, and had worn a pessary for displacement of the womb. On her admission, she was extremely anæmic, and on examination an inverted uterus was found in the vagina, about the size of a hen's egg. It was decided to make an attempt at reduction by taxis, and on November 4th she was placed under chloroform with this object. The left hand was introduced into the vagina, and counter-pressure with the right made over the hypogastric region. This was continued until partial

re-inversion of the uterus had occurred, and further pressure was maintained by an air-pessary placed in the vagina. On the following day the pressure was continued by a soft globular air-pessary, kept in position by a cupped stem-pessary. On the third day pelvi-peritonitis set in, forbidding any continuance of the vaginal pressure. After this she became seriously ill, and was in "much peril;" and no further treatment was adopted until January 9th, when a second attempt at reposition was made by means of a boxwood cup and straight stem. Constant pressure being effected by four strips of elastic webbing fastened to the extremity of the stem, and to a band passing round the waist. She bore this treatment for forty-eight hours, when it was found that the fundus had retreated some distance within the cervix. The cup was then removed, and re-introduced on the 13th, and worn until the 15th, when the recurrence of pain and sickness necessitated its removal. During the following month, six different attempts were made at intervals with different cups, but all failed to secure complete reposition, and a further attack of peritonitis, followed by abscess of the right broad ligament, made it necessary to desist from further efforts. On March 31st, Dr. Aveling's sigmoid repositor was introduced at 3.15 P.M., and soon afterwards morphine was injected, as the patient complained of pain. On April 1st, the four elastic bands were tightened without causing any

increase of the slight pain, which she felt only when moving. On April 2nd, at 11 A.M., the bands were again tightened, and during the day she had more discomfort. At 7 P.M., she had a rigor, and the temperature rose to 103.4° . The bands were therefore loosened; and, while in the act of doing so, the resident accoucheur and patient both "felt something give way," and she experienced immediate relief. The repositor, at the patient's request, was not removed until the next day, April 3rd, when the temperature had fallen to 100.8° . At 2 P.M., an unsuccessful attempt was made to remove the cup, which was found tightly grasped by the cervix. At 5.30 P.M., the patient being under chloroform, Dr. Gervis, by tilting the cup, removed it without difficulty, and the uterus was found completely re-inverted. Not a single unfavourable symptom followed. She made a speedy recovery, and on the 18th left for the country.

CASE V.—Mrs. S. B., aged 29, married, had a child two years ago. The birth was followed by great flooding, which had continued more or less ever since. Inversion of the uterus had been discovered, and two attempts at reduction by taxis had been made. In April 1879, the patient entered the Samaritan Hospital under the care of Dr. Rogers. On the 28th, at 10 A.M., Dr. Aveling's sigmoid repositor was applied to the fundus of the uterus without any

difficulty, and the required tension was given to the bands by Dr. Aveling. During the day, the patient complained of very little pain, and at 9 P.M. the bands were tightened. The patient slept pretty well, and at 10 P.M. on the 29th, she was very comfortable, and the bands were again tightened. At 5 P.M. they were tightened again. At 10 A.M. on the 30th, the patient said that at 2 A.M. she had felt great relief, something having "given way." On examination, the cup was found within the uterus, and it was removed without difficulty. The fundus was found restored to its natural position. The patient recovered rapidly, without a bad symptom, and left the hospital on May 8th.

CASE VI.—Mrs. D., aged 29, married, was admitted into the Middlesex Hospital under the care of Dr. Edis. She had suffered, more or less, from continuous uterine hæmorrhage since her last confinement, which took place nearly five years previously. Inversion was discovered, and attempts to reduce the displacement had been made by means of air-ball pessaries, which treatment had, on one occasion, been continued for two weeks consecutively. On August 22nd, 1883, at 9.30 A.M., Dr. Aveling's sigmoid repositor was carefully adjusted, an adhesion which existed between the uterus and the posterior vaginal wall having been previously torn through with the finger. During the day, the pressure was carefully regulated, and at

10 P.M. the patient was very comfortable. On August 23rd, at 9.30 A.M., the cup, which was found buried within the rim of the cervix, was removed and re-adjusted, after syringing the vagina. At 9.30 P.M., the patient was very comfortable. On August 24th, at 9.30 A.M., the patient had passed a comfortable night; the cup was completely within the uterus, and the stem gripped by the contracted os. The repositor was removed, and the partly inverted fundus could just be felt within the uterus. A small India-rubber ball was then passed into the uterus, and the repositor reapplied. At 9.30 P.M., the cup of the repositor was found external to the os uteri, evidently exerting no pressure on the fundus. The ball was therefore removed, and the cup readjusted to the still partially inverted fundus. On August 25th, at 9.30 A.M., on examination, the cup of the repositor was found to be completely imbedded in the cavity of the uterus. It was removed, and, on passing the finger within the cervix, the fundus uteri could be no longer detected. At 4 P.M., the uterine sound was passed three and a half inches, and the fundus could be felt in its normal position by conjoint manipulation. The patient convalesced rapidly, and, when seen some months afterwards, reported herself as "quite well."

CASE VII.—A. N., aged 24, was admitted into the Samaritan Hospital, under the care of Dr. Bantock.

She was confined of her last child on September 25th, 1884. About ten minutes after the birth of the child she became very faint, and lost consciousness for several hours. She was admitted on November 24th in a very weak and anaemic condition. On November 25th, an attempt was made to reduce the uterus by taxis, the patient being under chloroform. The fundus, however, could not be made to pass within the os; she was therefore put back into bed, and Dr. Aveling's repositor applied, but it was not considered prudent to continue its use, in consequence of the discovery that during taxis the mucous membrane of the recto-vaginal septum had been torn for about two inches longitudinally from the perineum. On December 10th, at 9 A.M., Dr. Aveling saw the case with Dr. Bantock, and applied his sigmoid repositor, pointing out that the bands of one which had been used before were of insufficient strength. On December 11th, at 9 A.M., the uterus was still unreduced; the cup was removed, and re-applied after washing out the vagina with iodine solution. Three hours afterwards, the patient began to complain of pain, and morphine was administered subcutaneously. At 5 o'clock, the uterus was found reduced, and the cup of the repositor was relieved from the grasp of the cervix by a little manœuvring. On December 15th, the patient returned home, feeling wonderfully well, and complaining of nothing.

CASE VIII.—Mrs. H., aged 33, was admitted into the Royal Hospital for Women and Children on September 1st, 1884, under the care of Dr. William Duncan. The patient had been confined three times. After the last she swooned, and did not come round for some hours. For nine years afterwards she continued to have a discharge of blood almost without intermission. She was very blanched from this constant loss. On examination, a rounded smooth red mass, about the size of a large green fig, was found in the vagina, which was readily diagnosed as an inverted uterus. September 2nd, at 4 P.M., Dr. Duncan inserted the cup of Dr. Aveling's sigmoid repositor into the vagina, and a moderate amount of elastic pressure was applied in the usual manner to the stem. A hypodermic injection of morphine was given. On September 3rd, the patient slept well, and appeared comfortable. The repositor was found to have slipped in front of the uterus, and was consequently doing no good. It was replaced, plugged all round, and considerable pressure applied. On September 4th, the patient had little pain and slept well. The stem seemed to have entered further into the vagina, but the instrument was not disturbed until 4 P.M., when the uterus was found completely reduced. Some difficulty was experienced in removing the cup from the uterine cavity, but this was eventually effected by unscrewing the cup from the stem, and seizing it side-

ways with strong lithotomy-forceps. Some sickness and feverishness followed, but the patient was practically well on the 18th.

CASE IX.—Mary P., aged 25, was admitted into Guy's Hospital in March 1884, under the care of Dr. Galabin. She was delivered in September 1883, and the inverted uterus appeared externally on the third day after. The medical attendant, who appears not to have recognized the character of the case, satisfied himself with returning the mass into the vagina. Metrorrhagia continued up to the date of her admission, and the patient was much blanched. There had been no attempt at reduction. Dr. Aveling's sigmoid repositor was applied, and the reposition of the uterus was completed suddenly when it had been worn fifty-three hours. The reduction was followed by rather severe symptoms of collapse and shock, leading to suspicion of internal hæmorrhage. The patient, however, eventually did well, but had an attack of cellulitis.*

* Since the publication of this Case, I have received the following further particulars relating to it from Mr. Bunting, of Clevehurst, Torquay:—

“On reading your interesting lecture on ‘Inversion of the Uterus,’ &c., I recognize Case No. IX., Mrs. P——, as a patient of mine when I was living in Tottenham. There is an inaccuracy I will, with your permission, point out, and also give you further details.

“She was confined in September 1883, and the doctor engaged

CASE X.—E. C., aged 37, was admitted into the Chelsea Hospital for Women on February 4th, 1886, under the care of Dr. Aveling. She was confined on September 26, 1885. Her labour lasted six hours, delivery being effected by the forceps, continuous traction being made for fifteen minutes—the pains at this time following one another very rapidly. The medical attendant removed the placenta ten minutes after birth of child, and remarked probably that

to attend her did not arrive until after the child was born, and the nurse was said to have tugged pretty freely at the cord. After the placenta came away the patient had much pain and hæmorrhage, and on the third or fourth day the doctor examined her and said he had replaced the womb, and she said she had less pain for a time, but the bleeding continued. Yet she did some of her household work, and went home to her friends for a few days at Christmas.

“She came under my care in January 1884, and was then *in extremis*, almost pulseless, sick, in much pain, and constant discharge of bloody fluid on examination, which could scarcely be endured. I found the uterus completely inverted, the fundus resting on the perineum. I gave her ergot and opium, kept her in bed, the discharge got less, and, when she had somewhat recovered herself, I tried to re-invert laterally, but failed. Hæmorrhage recurred, so after a fortnight’s rest I tried a Cutter’s cup pessary with elastic (*i.e.*, india-rubber) bands, but, after getting one-third of it back, I failed to reduce the whole. I then induced Dr. Galabin to take her into Guy’s Hospital, with the result as you know. I thought the repositor was an American invention, and tried some surgical-instrument makers without effect. I regret very much I did not know of yours.

“I may add that Mrs. P—— was pregnant again last spring, and miscarried at about six months.

another child was still to come. A great deal of blood was lost after removal of placenta, and ever since there had been a constant vaginal hæmorrhage, amounting to a flooding three weeks before admission. There had been no pain whatever at any time.

On admission, the breasts were very tender to the touch, and much distended with milk. *Per vaginam*, a smooth, hard, pyriform mass was felt projecting into the vagina, having no depression on its surface, becoming somewhat attenuated as it passed upwards, and being encircled by a smooth ring superiorly. The uterus could not be felt bimanually in its usual position, and a sound would not pass. *Per rectum* (with patient straining), a cup-shaped depression was felt surmounting a pyriform mass. A sound passed into the bladder could be readily felt *per rectum*, no structure intervening.

February 5th, 3 P.M.: Dr. Aveling applied his sigmoid repositor. The patient, Irish, was very restless afterwards, and therefore received a hypodermic injection of one-eighth of a grain of morphine. There was a slight sanious discharge following the introduction of the repositor.—12 P.M.: She had had considerable uneasiness in the lower abdomen since 9 o'clock, but experienced sudden relief about midnight. *Per vaginam*, the cup of the repositor was nowhere to be felt.

February 6th, 9 A.M.: She had had a good night,

without further sedative. The breasts were still much engorged with milk. Pulse, 118; temperature, 101·8°. Had no pain.—3 P.M.: The uterus was completely re-inverted, and had been so evidently for some hours, as the cervix was so firmly contracted over the cup of the repositor that the administration of an anæsthetic was required to disengage it.

During the treatment, the patient got out of bed, and wanted to go home. This movement did not displace the repositor. Taking it for granted that the reposition took place when the sudden relief was felt about midnight, the time occupied in re-inversion was only nine hours. This short time was probably due to the inversion being of only four months' standing.

CASE XI.—Dr. D. A. Davies, physician to the Swansea Hospital, relates this case. Mrs. T., aged 38, mother of four children, the youngest aged 3, was attended by a midwife in her last confinement. She lost much blood. Three days afterwards, when sitting upon the night-commode, she felt a severe shock; she felt as though something were coming away from her, and was helped back to bed, sick and faint. She was not seen by a medical man for some months afterwards.

Attempts were made repeatedly to reduce the uterus, which was found to be completely inverted; but without success. When first seen, she was greatly

emaciated, looking worn and very anæmic. This had been induced by the frequent hæmorrhage and leucorrhœal discharge, and frequent vomiting. Her health had become gravely deteriorated.

After some ineffectual attempts at reduction, I gave a dose of opium to allay irritability, and fixed Aveling's repositoir, and the uterus corrected itself during the night. I removed the instrument the next morning. The cup was in the uterus. The curious point in this case is, that two days afterwards, on examining the woman, I found the posterior wall bulging in and down; in fact, re-inversion was proceeding, not, as is usually described, by the fundus becoming cup-shaped and tending to come down, but by the bulging of the posterior wall.

I was able to correct this immediately by pressure with the fingers. The uterus corrected itself with a distinct slip; and I had no further trouble with the case. I kept her in bed for a month, and fed her up; but it was three or four months before she began to feel really strong. Menstruation became regular, and normally frequent; and she has since been delivered of another child without any incident worth noting.

Remarks on the Foregoing Cases.—It will be noticed that in no case was the pain resulting from the treatment excessive, and only in one case, Dr. Galabin's, were there any unpleasant after-con-

sequences ; but, in his case, the ultimate result was quite satisfactory. The time required for re-inversion by my method is a question of interest. The following table shows this :—

Case	I. . .	Operator, Aveling . . .	Hours, $54\frac{1}{2}$
„	II. . .	„ Williams . . .	„ 33
„	III. . .	„ Gervis . . .	„ $51\frac{3}{4}$
„	IV. . .	„ Aveling . . .	„ $52\frac{1}{2}$
„	V. . .	„ Rogers . . .	„ 40
„	VI. . .	„ Edis . . .	„ 48
„	VII. . .	„ Bantock . . .	„ 31
„	VIII. . .	„ W. Duncan . . .	„ 48
„	IX. . .	„ Galabin . . .	„ 53
„	X. . .	„ Aveling . . .	„ 9
„	XI. . .	„ Davies . . .	„ 14(?)

This table demonstrates that, on an average, each case took about 40 hours for its cure, the longest time occupied being $54\frac{1}{2}$ hours, and the shortest 9 hours.

In Case I. it will be noticed that the pressure employed never exceeded two and a half pounds, and I still think tension to that extent sufficient.

In Case VI. we find valuable experience—namely, not to remove the repositor too soon, and to have no doubt as to the power of the repositor to completely re-invert the uterus.

In Case VII. the cup slipped in front of the uterus, exactly the opposite way to that in which the ends of all repositors slip. This displacement was probably due to the tension of the posterior bands being too

great. The plan of plugging the cup all round, to maintain it in its proper place, I have never found necessary.

In Case XI. there was an attempt at recurrence of inversion two days after reposition, which shows the necessity of contracting the uterus after replacement by hot-water syringing and ergot.

Perhaps I may be permitted the satisfaction of calling attention to the fact that, in some of these cases, many methods of treatment, manual and instrumental, had been employed by our most eminent gynæcologists, without success. The superior advantage of my repositor consists in its enabling the operator to press the uterus up in a line with the axis of the brim, and incontestably proves, by its happy results, that the success of a repositor is in exact proportion with the directness of its action.

An Unsuccessful Case.—I have now the painful duty of relating a case in which my repositor failed. M. H., aged 48, unmarried, was admitted into the Rotunda Auxiliary Hospital, November 15, 1880, under the care of Dr. Atthill. On admission, she was very anæmic, and an examination revealed inversion of the uterus induced by the presence of a small fibrous tumour. By a process of enucleation and avulsion, this was removed, and proved to be about the size of a hen's egg. When the patient had recovered from

this operation, an attempt to replace the uterus was made by means of Dr. Aveling's sigmoid repositor. The adjustment of this was effected without much difficulty, although the vagina was narrow; the cup of the instrument was, however, too small to receive the fundus of the inverted uterus, and it slipped off whenever the patient altered her position. A similar attempt was made a fortnight afterwards, without using a larger cup, with a like result. After this, White's repositor was tried, but success was not attained by its use. Finally, it was decided to remove the uterus by means of the *écraseur*. After removal, the fundus was found to be flat, and in diameter about an inch more than that of the cup of Aveling's repositor.

The evident cause of failure in this case was the disproportion between the fundus and the cup of the repositor. By elastic bags, the vagina might have been enlarged sufficiently to have admitted a cup of the required dimensions; and I feel satisfied that the case would have been successful if a larger cup had been used. So confident was I of the curability of the case, that I offered to pay the expenses of the woman coming to London, if I might be permitted to make one more trial before the uterus was removed. I shall always regret that my request was not granted.

The Sigmoid Repositor.—The first thing to be sure of is, that you have been supplied with a proper

sigmoid repositor. Instrument-makers and gynæcologists have their own notions as to what an instrument should be, and have them made accordingly. In one exhibition of instruments, I have seen three different patterns of my polyptrite shown by various makers. The liberty thus taken is most unfair to the inventor, for his reputation rests upon the action of his instrument. If it has been so altered as to become dangerous, he is naturally blamed for having conceived and advised the use of it. I cannot give a better instance of the complaint I am now making than by referring you to the engravings of my repositor given in the largest and most exhaustive treatise on inversion, recently published by Dénuce, of Bordeaux. Without having seen my repositor, he has ventured to give illustrations of it, giving a totally wrong idea of its form and mode of action. A repositor such as he has given as mine could not be worse in shape; for, besides acting in an improper direction, it causes the cup to be applied to the fundus in such a way as to insure its slipping off. Instrument-makers in France are, I have no doubt, making repositors of this pattern, and selling them as mine; for Dénuce does me the honour of referring to my "*résultats très brillants*." Another instance of detrimental change in my repositor occurred in this country. Dr. Bantock had supplied to him, instead of the india-rubber rings which I recommend, india-rubber bands quite unable to

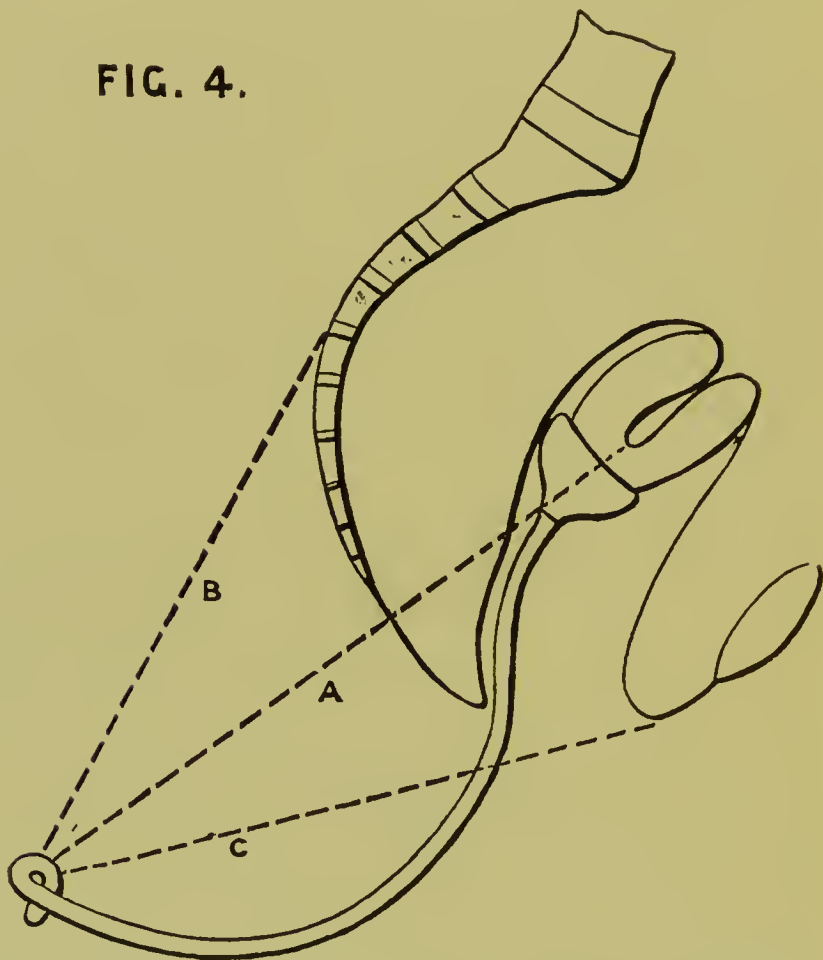
exercise sufficient elastic pressure to re-invert a uterus. The first thing, then, is, I repeat, to be sure you have the repositor, rings, and bandages, of the proper pattern. The length of the repositor, including the cup, is ten inches. The stem is made of German-silver wire not quite two-tenths of an inch in diameter. The cup is of vulcanite, and screwed to the stem. It should not be made of wood, as it is apt to split when soaked by vaginal moisture. The cup most generally useful is an inch and a half in diameter; but smaller or larger may be required. The elastic rings are two inches in diameter and two-tenths of an inch wide.*

Directions for Using the Sigmoid Repositor.—Having diagnosed inversion, determine by touch the size of the fundus, and select a cup of proportionate size. It should be in diameter slightly less than that of the fundus; next apply the belt round the waist, and then the braces over the shoulders, and fasten them by the safety-pins to the belt. This should be done in such a way as to leave room to pass the tapes, to which the rings are attached, between the pin of the safety-pin and the belt. Now the cup of the repositor should be applied to the fundus uteri, and held firmly in position by an assistant while the rings are adjusted, two being taken in front and two behind.

* The sigmoid repositor, rings, and bandages, may be had from Messrs. Mayer & Meltzer, 71 Great Portland Street, W.

(Fig. 4). The ends of the tapes should next be passed between the safety-pins and the belt, parts of the tapes drawn through, and a knot made at the ends to prevent

FIG. 4.



THE SIGMOID REPOSITOR APPLIED. A, LINE OF PRESSURE.
B, C, TRACTION LINES OF ELASTIC BANDS.

them slipping back. Tension may be lastly exerted by drawing the tapes up through the pins, and fastening them at any point by tying a loop. This loop can be

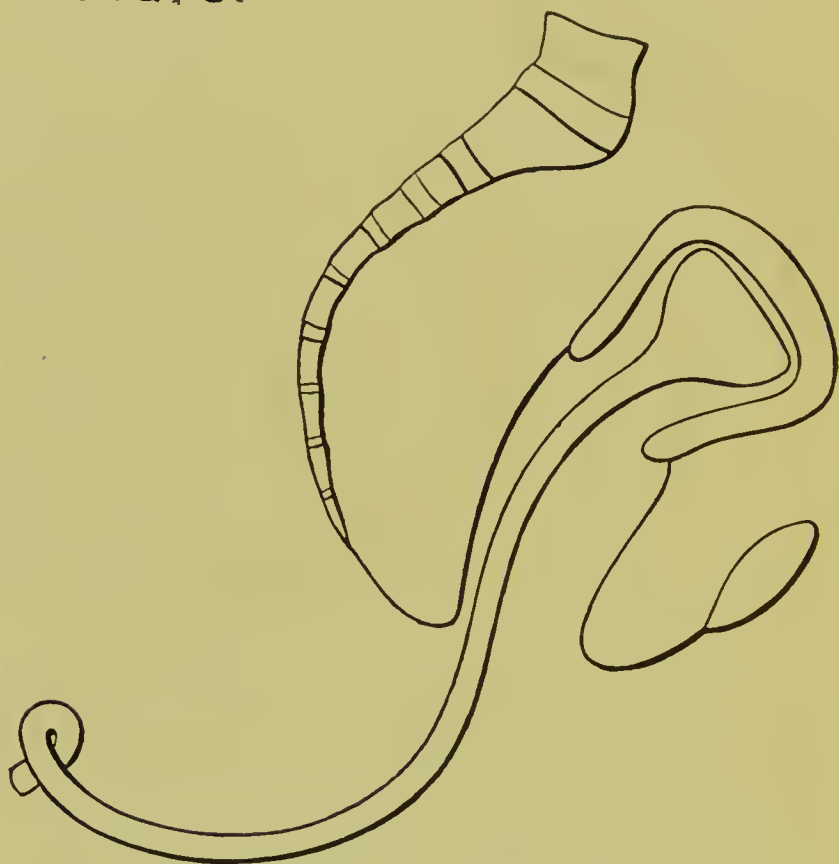
easily pulled out and re-tied, should more or less tension be required. Care must be taken to have the tension equally distributed; for, if the front bands be tighter than the back, there arises the fear of the cup being slipped back off the fundus; and the opposite may occur if the posterior bands be tighter than the front. The india-rubber bands passing to the front should be carefully laid outside the labia, and packed with cotton-wool. If the patient be restless, or complain of pain, morphine may be administered. She should be carefully watched, and the urine should be drawn by catheter when necessary. It is difficult to lay down any rules for tightening and loosening the tapes. This will be determined by the practitioner, who must judge by the existing tension, and the tolerance of it by the patient. In my last case, re-inversion was accomplished without the tapes being touched after their first adjustment.

Reduction takes place by the cervical method. Newnham advised this mode of re-inversion in 1818. He said: "It is wisest and best to endeavour to re-invert the uterus by returning first that portion of it which was last expelled from the os uteri." Pressing on the fundus causes counter vaginal traction on the cervix, making it unroll gradually until the internal os is reached, where a little delay is caused by its being less dilatable. When this point is passed, the body of the uterus soon opens, and admits the cup.

The last step must take place rather suddenly, for all patients say they feel that something has "given way," and comparative comfort is the result (Fig. 5).

When the inversion has been reduced, the sooner

FIG. 5.



REPOSITION COMPLETED.

the cup is withdrawn the better, for the cervix immediately begins to close round the metal stem, and the cup becomes firmly grasped in [the uterine cavity. The most easy way of removing the cup, is to tilt it

on end, and bring it through the os as you would a button through a button-hole (Fig. 6). If it have

FIG. 6.



MODE OF REMOVING THE CUP FROM THE UTERUS

been long retained, an anæsthetic will assist. It might be a good plan to have a hole made through the edge of the cup, through which a stout string might be passed, by which to make traction. Continuous elastic traction on this string would remove the most firmly grasped cup with certainty. The stem might be previously unscrewed from the cup.

When the cup has been removed, pass a thick sound into the uterus; and, by pressing the point of it forward, the rounded fundus will be felt through the abdominal walls. Being satisfied that complete re-inversion has taken place, syringe out the uterine cavity with iodine water at 120° Fahr., which will cleanse its surface and make the whole organ contract.

I think, gentlemen, after considering these facts, you will come to the conclusion that every case of chronic inversion of the uterus can be cured by sustained elastic pressure exercised in the right direction; and I hope you will not think me too sanguine when I state my belief that the mutilation of a woman, by removing her uterus, will no longer be necessary in consequence of the impossibility of replacing this important organ when inverted.

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